jaundice appears to be due to obstruction, and not of hemolytic origin. The mode of excretion as studied in the guinea-pig by the Japanese workers is by the bile, feces and urine, but it is only in the latter that it can be demonstrated readily under the microscope. Infection may take place through the skin, or by the mouth, and the infective organism is probably spread mostly by the urine and feces. It has been noticed that the majority of cases come from localized portions of the front-line trenches, and that these trenches were always damp or wet, because it was impossible to drain them properly. When troops were moved out of these trenches, they ceased to have cases of jaundice, and when fresh units were brought in, although there were no cases among them before, the disease soon developed. In addition to the patients themselves distributing the organisms, it has been found by the Japanese investigators that 38 per cent. of the field rats coming from the areas to which jaundice was epidemic showed the presence of the spirochete. So that in the trenches the omnipresent rat may also act as a carrying agent and spread the disease by means of its urine directly or indirectly. Early diagnosis by finding the organism is not easily possible. Up to the seventh day it may be looked for directly in the blood with dark-ground illumination but it is difficult to locate owing to the small number of organisms present. The spirochete does not appear in the urine until about the ninth day and then only in very small numbers, but the number increases rapidly and reaches the maximum at about the thirteenth to fifteenth day of the disease. The most satisfactory diagnostic test is by injection of the patient's blood or urine into the guinea-pig. In a positive case after an incubation period of six to twelve days, the animal develops the disease and dies. On account of the time required by this test—the most decisive of all—the main reliance in diagnosis has to be placed on the correct interpretation of the clinical signs and symptoms. W. H. F. A.

Epidemiological Study of an Outbreak of Measles.—Lieut.-Col. Edward L. Munson, M. C., U. S. A. (*Military Surgeon*, xl, 666; xli, 63, 186, 257), gives the results of a study of an outbreak of 444 cases of measles among 13,773 troops. He calls attention to the sanitary importance of measles among troops. It is his belief that the disease should be classed among the respiratory diseases instead of among the eruptive fevers, and is of the opinion that an epidemic of respiratory diseases should be regarded as a warning of an outbreak of measles. The exciting cause is believed to be a vegetable organism on account of the variable period of incubation, irregularity being characteristic of the development of vegetable rather than of animal life, and because it is more or less alike in its requirements for perpetuation and development to the exciting causes of other respiratory diseases of bacterial nature. The duration of the infectivity of the disease is that of the catarrhal stage. This undoubtedly varies and the length with few exceptions seems almost impossible to determine. Many cases were preceded by "coughs" and "colds" of obscure origin and when one clinical condition merged into another often is not possible to say, indeed rapid rise in the respiratory sick rate should serve as a warning that an outbreak of measles is impending. It is believed that the

period of infectivity comes at least three days before the rash appears. The apparent incubation period was thirteen to fourteen days, the wide variation given in some text-books being never observed. Of the contributory causes, the environment in the tent is believed to have been the most important. Cold weather brought about the use of stoves and led to poor ventilation, with the result that the respiratory sick rates increased promptly and extensively. There is no direct effect of the weather on the cause of the disease, but it acts indirectly through the mode of life of the individual. Spitting was probably a fruitful way of transmitting measles. There is reason to believe that virulence, size of dose, and repetitions or duration of exposure have much to do with susceptibility or immunity. This is merely an hypothesis at present but clinical experience is in favor of it. M. J. R.

Effect of Marching on the Rates for Non-efficiency of Newly Raised Troops.—Lieut.-Col. Edward L. Munson, M. C., U. S. A. (*Military Surgeon*, xl, 171), states that the amount of disability in a marching command is an expression of the care with which the troops were selected, the efficiency of their training and the thoroughness with which unfits were eliminated prior to the beginning of a march. When these factors did not obtain in like degree in different organizations the results were diverse and important, as shown by curves of graphic charts of admissions to sick report. Foot troops require particularly careful examination before being allowed to participate in campaign, especially as to their fitness as burden carriers; this includes freedom from disease, muscular development, condition of feet and general physical stamina. In the mounted service much of this does not apply. The mounted man is himself the burden and not a burden carrier. Weak feet, poor physique or slight ailment do not necessarily disqualify for ordinary campaign conditions. Physical standards are allowed to fall too low in many cases. Sufficient time should be taken to properly examine the men and exclude all unfits. After enlistment all substandards should be specifically looked for at the first opportunity and eliminated if there is reason to believe they will fail to accomplish the requirements of military service. Greater care is required in making inspections for concealed disease. There should be more training in marching. It will shake out men whose unfitness would otherwise be concealed. The idea that the disease is not transmitted through fomites is opposed. It is believed that immediate infection is possible under living conditions in military organizations and that every chance for such should be removed. Military life also affords many favorable opportunities for direct infection. Overwork and lowered resistance probably have little effect on susceptibility except through their interference with discipline. Troops from the country and small towns have a greater susceptibility to the disease. The exhaustion of non-immunity or not enables prophesies to be made as to whether or when more cases will occur. It is believed that improvement in general sanitation and ventilation prevented many cases, as shown by the incidence of the disease; 54 per cent. of the susceptibles in one group where discipline was lax and general sanitation poor had measles, while only 6 per cent.